

DOCUMENT RESUME

ED 111 103

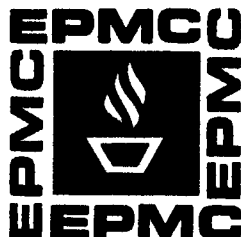
EA 007 477

AUTHOR Cook, Desmond L.; And Others
TITLE Analysis of the Role of Project Management in the LEA, Technical Memorandum No. 1. Interim Report. RF Project No. 3131-A1.
INSTITUTION Ohio State Univ., Columbus. Educational Program Management Center.
SPONS AGENCY Research for Better Schools, Inc., Philadelphia, Pa.
PUB DATE 15 Nov 70
NOTE 43p.; For related documents, see EA 007 478 and 479
EDRS PRICE MF-\$0.76 HC-\$1.95 Plus Postage
DESCRIPTORS *Administrative Personnel; Administrator Responsibility; *Educational Accountability; Elementary Secondary Education; Federal Aid; *Federal Programs; Government Role; *Management; Program Administration; *Projects; School Districts; Superintendent Role

ABSTRACT

Recent federal legislation in education has had an impact on education in the local school districts. The most obvious example is the use of federal funds and the consequent requirement for accountability. The local education agency is now faced with the need for management of the requirements for accountability. It is the intent of this memorandum to report on an analysis of one dimension of this management of public funds and programs--project management. The discussion of the role of project manager includes an examination of his job description (function, principal responsibilities, authority, duties, and techniques of management) and of the problem areas of the role. It is assumed that the reader is knowledgeable about innovations in education, the effect of massive involvement of the federal government in education, and the development of project management as a discipline. A number of appendixes provide related information. (Author/IRT)

* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *



U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

EA

ANALYSIS OF THE ROLE OF PROJECT MANAGEMENT IN THE LEA

TECHNICAL MEMORANDUM #1

"PERMISSION TO REPRODUCE THIS COPY-
RIGHTED MATERIAL HAS BEEN GRANTED BY

*Research for
Better Schools*

TO ERIC AND ORGANIZATIONS OPERATING
UNDER AGREEMENTS WITH THE NATIONAL IN-
STITUTE OF EDUCATION. FURTHER REPRO-
DUCTION OUTSIDE THE ERIC SYSTEM RE-
QUIRES PERMISSION OF THE COPYRIGHT
OWNER."

Desmond L. Cook
Paul August
Charles McLean
Peter Stoycheff

RF PROJECT NO. 3131-A1

November 15, 1970

EPMC INTERIM REPORT HEREIN WAS PERFORMED
PURSUANT TO A CONTRACT WITH

RESEARCH FOR BETTER SCHOOLS, INC.

PHILADELPHIA, PA.

EA 607 477

2

Educational Program Management Center

National Development Faculty, College of Education, The Ohio State University, Columbus, Ohio 43210

Technical Memorandum //1

TABLE OF CONTENTS

	Page
I. FEDERAL LEGISLATION IMPACT ON LOCAL EDUCATION AGENCIES	1
II. PROCEDURES EMPLOYED IN CONDUCTING THE ANALYSIS OF PROJECT MANAGEMENT IN THE LOCAL EDUCATION AGENCY	2
A. Literature Review	2
B. Proposal Review	6
C. Personal Interview	10
III. A VIEW OF PROJECT MANAGEMENT IN LOCAL EDUCATION AGENCIES	11
A. Role of the Project Manager/Director	11
1. Job Description	
a. Function	
b. Principle responsibilities	
c. Authority	
d. Duties	
e. Techniques of management	
2. Problem Areas	14
B. The Role of the Superintendency in Project Management	15
IV. IMPLICATIONS OF THE ANALYSIS PHASE FOR THE CONCEPTUAL PHASE	19
APPENDIX A. BACKGROUND AND INNOVATIONS IN EDUCATION LEADING TO THE NEED FOR MANAGEMENT IMPROVEMENT	21
APPENDIX B. A BRIEF HISTORY AND DEVELOPMENT OF PROGRAM MANAGEMENT	25
APPENDIX C. LIST OF DUTIES AND RESPONSIBILITIES FOR PROJECT MANAGERS	32
APPENDIX D. LIST OF DUTIES AND RESPONSIBILITIES OF EDUCA- TIONAL PROJECT MANAGERS	34
APPENDIX E. PERSONAL INTERVIEW COMMENTS	36
APPENDIX F. EPM INTERVIEW QUESTIONS	38

I. FEDERAL LEGISLATION IMPACT ON LOCAL EDUCATION AGENCIES

Recent federal legislation in the educational field has had an impact on education in the local school districts. The local school is no longer completely isolated from the larger social community. Many special problems which were exclusively in the domain of the local school districts have been adopted by state and federal agencies. For the first time large scale funding was made available through acts such as the Elementary and Secondary Education Act (Public Law 89-10) of 1965 and subsequent amendments. It is now difficult to find a single local school agency which doesn't have a program or project funded from one of the Federal Education Acts.

The most obvious consequence of the use of federal funds is the requirement for accountability. The need for management of the requirements for accountability, and other associated federal requirements must be faced by the Local Educational Agencies (LEA). It is the intent of this memorandum to report on an analysis of one dimension of this management of public funds and programs at the local school agency level - the dimension of project management.

It is assumed that the reader is knowledgeable of the innovations in the educational field, the effect of massive involvement of the federal government in education, and the development of project management as a discipline. If this assumption does not apply, reference is made to Appendix A titled, "Background and Innovations in Education Leading to the Need for Management Improvement." In addition, Appendix B, "A Brief History and Development of Program Management" is provided.

II. PROCEDURES EMPLOYED IN CONDUCTING ANALYSIS OF PROGRAM MANAGEMENT IN THE LOCAL EDUCATION AGENCY

The Analysis Phase of this effort was provided primarily to reinforce the need for project management training in the LEA's. While a great deal is known about project management, a concern existed that some area might be overlooked and that an investigation of the technical material, proposals, and personal interviews might produce some surprises. To date no great surprises have been discovered. However, as indicated by the following areas of investigation, several problems were uncovered which provided direction.

A. Literature Review

In an attempt to define the role of the educational project manager it is useful to examine the congruent role in industry and military where more project discipline development has taken place. Gerald M. Rosen advised the managers of military procurement-type projects to ask themselves the following questions:^{*}

What do you want to buy?

How do you want to buy it?

What are possible methods of performance or approaches?

What is not to be bought?

What are technical milestones?

What will be gotten out of the program?

What are deliverable items?

General Brehon Sommervell (retired) while President of Koppers Co.,

^{*}"Planning to Prevent a Problem," (A 300 p.5), Educational Program Management Center Library (EPMC).

Inc., in an address to a group of military and industrial managers at the Industrial College of the Armed Forces advised them to: *

State objectives

Plan a program for meeting objectives

Devise an organization which best helps the program

Establish authority and responsibility interchange

Cultivate simplicity (in responsibility and communications)

Control and direct the organization by:

Allocation of funds

"All aspects" handling of personnel

Reducing essential control variables

Planning

Formulating policies

Developing procedures

Making reports (both up and down levels of authority)

Use personal courage, brains (common sense), initiative, energy and resourcefulness

The following is a list of the roles of the local project director (manager) as suggested by the U.S. Office of Education:

1. Assumes responsibility for the overall success of the program.
That is, he plans, directs, supervises and evaluates the project within the time, budget, and framework of policy and purposes as previously established and adopted.
2. Insures that all aspects and components are fully and capably staffed.

"Basic Principles of Management" (A 435, p. 1-8). EPMC Library.

3. Takes action to prevent delays or obstacles in the attainment of the program goals and objectives.
4. Takes action to overcome obstacles which interfere with the attainment of program goals and objectives.
5. Maintains primary responsibility for fiscal, educational, and technical management of the program; as well as, business and administrative decisions required to plan and direct the project
6. Coordinates program sequences and time budget commitments.
7. Maintains relationships with all elements: LEA, SEA, OE, Independent Educational Auditors, etc., with interest in and support of the project.
8. Determines that all reporting and communication systems are operational.
9. Verifies validity and accuracy of analyses and reports.
10. Is responsible for reporting to the LEA Superintendent, and through him to the State, Federal agencies, and Independent Accomplishment Educational Auditor.

A study conducted by Cook, Kerns, and Damico (EPMC) entitled "An Investigation of the Responsibilities and Duties of Educational Project Managers" (Sept. 1970) lists 57 duties or responsibilities under the major categories of planning, organizing, directing and controlling. The complete list is included in Appendix C. This study was performed using the attendees at Educational Program Auditor Institutes sponsored in 1969 by the Office of Education. This group responded to the list of duties and responsibilities and selected the following as significant.

Selecting the staff

Directing personnel to specific tasks

Having sole authority for supervision

Expecting free advice from subordinates

Participating actively in team effort

Concentrating only on one project at a time

Having authority for trade-off decisions
concerning schedules and budgets

Having sole responsibility for project design

Developing a formal budget

Devoting majority of time to planning and
controlling functions

Replying to project related correspondence

Research for Better Schools, Inc. of Philadelphia (RBS) is aware of the importance of the manager in the successful completion of educational projects. They have an avid interest in research and program implementation in schools. Their evaluation of these efforts has revealed that the project manager is an important element in project, research and program success. Consequently, RBS contracted for research and training efforts in project management, of which this project is one.

The U. S. Office of Education has sponsored an effort by ERIC to build a model that assists in the planning, managing, and evaluation of Title III projects for advancing educational creativity. Questions are posed to the writer and manager (Miller, PACE 2nd National Study Report No. 3, p. 23). This report, in the form of questions, gets at the job description of the project manager and the supervisory personnel.

D.L. Cook (Chapter 1) "Educational Project Management" Charles E. Merrill Co., January 1971, describes the project manager as "...the focal point for the total project effort." He goes on to say that the project manager:

- develops the project plan
- identifies the objectives, the major events, milestones, and completion criteria
- controls the operation of the project
- secures and develops experiences for the motivation of project staff

Many articles, books and papers on the subject of military, industrial, or business project management give their own list of duties and responsibilities for the project manager. The summarized list is presented in Appendix C.

B. Proposal Review

A review of several sets of Title III proposals was conducted. These proposals were received from New Jersey, Montana and Ohio. A questionnaire form was prepared to not only analyze the proposals but also to facilitate gathering information on personal interviews. A copy of the form is enclosed as Appendix F.

The Title III proposals were analyzed because they contain typical aspects of an education project. They contain a time constraint, a money constraint and a statement of objectives and performance evaluation requirements.

It was found from the analysis that the project manager has a variety of titles including supervisor, coordinator and director. A majority of the

proposals refer to the project manager as the project director. However, none of the proposals used the title project manager. Project manager appears to be a more accurate term for describing the position of such a person, but since educators as a whole are more familiar with the title 'project director', the title 'project director' will be used interchangeably with 'project manager' in this and subsequent reports.

All of the Title III project proposals included sections on planning, organizing, evaluation, and, in many instances, the requirement for dissemination of the information on the project. These sections are generally required in the proposals by the state agencies administering the funds.

Most of the planning for the proposals was accomplished prior to their submittal. The proposals addressed themselves to educational problems in terms of needs. The project objectives were specified in performance terms to help satisfy these needs. In all of the proposals some project management planning tools were utilized. These planning tools included PERT charts, budgets for personnel, equipment and operations, equipment specifications, flow charts, organization charts, and event charts. The New Jersey proposals were required to include a PERT chart. Most of the PERT charts however were created by a single agent outside the LEA. It was also found in many of the proposals that the project director was not involved in the initial planning of the project. It might therefore be noted that including these aids in the proposal is no guarantee that they will be employed by the project director.

The duties and responsibilities of project directors were listed in many of the proposals. In analyzing these duties and responsibilities it was found that they were primarily concerned with the project director's

ability to organize, coordinate, direct and execute the project.

Very few of the proposals correlated their evaluation criteria directly with their objectives. Most of the documents included a separate section on evaluation. These sections were, in some cases, vague. In most of the proposals an identification of the people who were to conduct the evaluation was not stated. The responsibility apparently was left up to the project director. When consulting services were specified by the project, they were generally used for evaluation purposes. This appears to indicate a lack of expertise by the project directors in this area. Of course there were areas where consultants were used but these usually dealt with areas outside the realm expected of project directors, i.e. subject matter, media and education technology experts.

Almost all the proposals contained a section dealing with the dissemination of project information. Dissemination of the information usually took three forms: information sent to those directly affected by the project, those indirectly affected and to the general public. Those directly affected were informed primarily by direct verbal contact, by letters, and by reports. The indirectly affected were usually informed by brochure, meetings and exhibits. The public was usually informed by the mass media and programs conducted by clubs and civic organizations. Since most of the project proposals contained a requirement for dissemination of project information it was felt that the project director should be provided some help in this area.

There was no pattern to the projects proposed in terms of subject content. They were of such a diverse nature that they could not reasonably be classified, except to be identified with improving some aspect of education. However, there were several projects to set up centers for learning,

resources, information, data collection and evaluation. Several others were concerned with employing various methods to aid disadvantaged students. Several of the projects were coupled with subsequent year projects in order to achieve a program continuity in the LEA.

The analysis indicates that the project director's background in education and training basically fall into two areas. First, there are the directors who are in the position because they are experts or learning specialists in the project's subject area of specialization. The other type of project directors come from the administrative areas in LEA. They may had some managerial experience but are not necessarily versed in the techniques of project management.

Most of the project directors were provided with some secretarial help paid for by federal funds. An advisory committee was selected to aid the project director when there was a concern about the project and its inter-relationships with the community or public. It was found that most teachers and other staff members participated half time or less during the school year. When teachers were involved full-time it was usually during the summer when school was not in session and they were not burdened with other functional matters.

Federal funds requested by the proposals ranged from \$12,000 to \$112,500 with a majority of them falling near \$55,000. In many of the projects, facilities, equipment and personnel were utilized by the project from the LEA, past projects, state and private contributions, which were usually not given a dollar amount.

C. Personal Interviews

Additional information about the project manager's role was obtained from interviews with the project directors of local educational agencies. These interviews conducted in various parts of Ohio identified some of the problems encountered by the project managers.

As of November 6 there have been interviews with ten project directors and four supervisors (Superintendent, Assistant Superintendent, Curriculum Director and Federal Funded Project Director). These interviews revealed that the project manager was responsible for:

- * Concept development
- * Proposal writing
- * Proposal presentation at local administration and state funding agencies
- A thorough familiarization of the proposal as a total entity
- Attention to the project's overall objectives
- Attention to the budget and business aspects
- Dealing with day to day operations on the project
- Leading the project staff toward performance of essential tasks
- Obtaining authority to implement aspects of the project into existing school programs
- Inter-personal relationships with principals and teachers (leadership role)
- Developing a total school system concern for the successful operation of the project (PR role)

*In only a few cases.

Selected comments from the interviews with educational project managers are included in Appendix E.

III. A VIEW OF PROJECT MANAGEMENT IN LOCAL EDUCATION AGENCIES

A. Role of the Project Manager/Director

The analysis phase has generated, through examples of actual cases, the need for an improved way of managing the effort to bring about changes in education. The present section provides us with the managing of change within the LEA, defining the general nature and character of the project management discipline.

1. Job Description

A definition of the role of a project manager and a tabulation of the findings of literature, proposal document reviews and personal interviews was presented, strengthening our knowledge of the needs and problems of managing effort in the LEA.

This then leads us into the next step - that of establishing the role of the project director in the local educational agencies. We must provide not only a definition of his function but also define his responsibilities, authority, duties, and some of the tools he has to work with. Also, we need to identify his relationship with the other facets of the local educational organization.

a. Function. The Project Director is the single central figure responsible for the achievement of the project objectives. He is accountable to the head of the LEA which approved and is responsible for the implementation of the project or program.

b. Principal responsibilities. The project director is responsible for accomplishing the project objectives in accordance with:

- 1) Goal/Performance specifications

- 2) Time requirements
- 3) Funding limitations
- 4) Other resource limitations

c. Authority. The project director has complete and final authority commensurate with his specified responsibilities. He is to:

- 1) Define and focus the project Goal/Performance requirements and control the assignment of tasks
- 2) Plan, organize and control the project within the time, cost and performance specifications required by the project
- 3) Demand that assigned tasks be done within the agreed upon budget and time span
- 4) Direct the work being performed on the project regardless of organizational level of the assigned person responsible for the task

d. Duties. The project manager is the key individual in project management and his job requires unique capabilities. He possesses special knowledge and skills which he applies to meet the project objectives. This knowledge can be acquired and the skills gained through experience.

An analysis of the duties of the educational project manager provided the following list:

- 1) staffing the project
- 2) assigning staff to specific tasks
- 3) making policy statements
- * 4) making plans or organizing to obtain objectives
- 5) making decisions and having authority for decisions
- 6) managing the budget

- 7) solving problems
- * 8) controlling, scheduling, or executing
- 9) motivating
- 10) supervising
- 11) participating in team effort
- 12) communicating and promoting (PR)
- 13) expecting advice from others
- 14) reporting
- 15) concentrating on one project at a time
- 16) delineating clear lines of responsibilities

e. Techniques of management. Useful management techniques which require knowledge of tools available and the skill to apply in project management are:

Time Scheduling	sequential listing, bar charts, Gantt charts, flow diagrams, logic diagrams, PERT network, master phasing scheduling
Funds Allocations	manpower estimate forms, procedures, budgets, forecasts, trend charts, cost plan
Resource Allocations (other than funds)	facilities, expertise (consultants), Advisory Committee, equipment lists, clerical, utility and trade services
Plan and Action Definitions	objectives, definitions, procedures, work breakdown structure, materials matrix, task definition

* Most experts indicate that 70-80% of the project managers effort is devoted to these areas.

Delineating lines of Responsibility	establish management responsibility guide (MRG), task definition
Orderly Reviewing	regular staff meetings, progress reporting
Coordination of Plan and Control	schedules, budgets, meetings, trend analyses

2. Problem Areas

All areas of project management from the initiation of plans through all the phases of controlling are confronted by problems, however the LEA Project Personnel interviews brought out the following specific problem areas:

- a. The lack of a plan for accomplishing the project effort. No clear delineation of when tasks are to be accomplished intermediate to the achievement of the project objectives. This then leads to the subsequent problems.
- b. That of determining where the project effort is at any particular time. There is no measure against which to determine progress of the product. This also leads to a whole host of problems such as - funding (both overrun and underrun) which ultimately leads to poor performance in meeting project objectives.
- c. Another area that requires clarification is in the field of funding - this deals with the planning for expenditure on the project and reimbursement by the funding agency. There seems to be a lack of uniform policy and or lack of knowledge on the part of the project directors of the way in which funds are dispensed to the project. A need exists for educating the project directors in dealing with the complicated and varied constraints of local, state and federal funding policies and regulations.
- d. The ability to perform effectively in functional organizational areas provides the project director with a considerable challenge. This problem deals with the recognition of the importance and the need for the project by the functional areas. The functional areas are generally burdened with their everyday effort and do not desire to be encroached upon by any additional requirements. The project manager needs the ability to perform functions in conjunction with the managers of parallel endeavors (example is

a reading specialist from a project office working within a school building where special reading is outside stated [recognized] curriculum). To summarize, this problem deals with the general problem of human relations. The effectiveness of the project director being measured by his ability to communicate, motivate, and direct the people necessary to accomplish the project objectives.

B. The Role of the Superintendency in Project Management

The tactical success of the project management concept in an LEA depends upon the competencies and skills of the project director operating within the individual project. The strategic success of the concept depends ultimately however upon the acceptance of the project management concept by the top level management and/or administrative personnel in the school district. Top level management is defined here to include offices and agencies such as the Board of Education, Deputy Director, superintendent, associate superintendents, and in some cases building principals. Not only must such persons accept the concept but they must also provide support to the project director. Support here means not only the provision of space and facilities for project operations but also the providing of administrative support in terms of granting to the project director the authority needed to complete the requirements of the project. The granting of the authority required for successful implementation of the project management concept will perhaps require different or modified organizational structures or patterns than now exist in the local educational agencies.

As has been demonstrated in the public and private sectors, implementation of the project concept has resulted in new organizational patterns. Projects are temporary operations and hence cannot be institution-

alized in traditional line-staff relationships. Since in most cases projects cut across functional departments and draw upon resources from these departments, conflicts with regard to authority about project operations and decisions are likely to occur. Top management personnel must be prepared to recognize this problem and develop skills and competencies to deal with the problem.

It is important for a superintendent to recognize that an agreement within the school district is necessary for the need of a project and/or program. Funds are then secured or granted to support the project effort and personnel assigned to carry out the tasks. Even then it is not unusual to find that the resulting project effort cannot be effectively implemented in the district because principals and teachers do not wish to have the operations under their control disturbed by the activities of the project staff. For example, a school district might establish a Title III project designed to develop a new science curriculum. Once initial materials are developed, they need to be tried in actual classroom situations. At this point, resistance may be encountered when the project staff attempt the implementation. Such resistance might be a flat rejection while in other cases it might be a cautious acceptance. In any case, the superintendent must be aware of the difficulties inherent in such situation and their effect upon the morale as well as the operations of the project staff.

In addition to the acceptance and support of the project management concept, the superintendents must be prepared to recognize also that many of the activities undertaken in a school district can be classified as projects. Such tasks as report card revision, curriculum development,

installation of data processing equipment, and other tasks can be best accomplished by the utilization of the project management concept. It is important therefore that the top level management personnel be familiar with the general concepts of project management and be particularly aware of the conditions and situations where in they might be employed. In many cases, such tasks as noted above are currently handled by the use of task forces, commissions, committees, and the like. Implicit use of the project management concepts is made in such cases. It is important to have the top level management personnel recognize that the end product of many such tasks are new ideas, operations, or decisions. In effect, the concept of project management has been used to bring about change in the local school district.

One of the major problem areas facing the top level management in the local school district is the selection and appointment of the project director. In most cases, this action is taken at the Board or Superintendent level. Competencies and skills needed by the project director are outlined elsewhere in this report. The point to be stressed here is that in many actual instances the wrong person may be appointed as director with the consequent result of project effectiveness being diminished. Top level management in school districts have been known to select as project directors persons who have professional competency in a substantive area of the project but unfortunately have little administrative or management expertise or competency. Attending to the myriad of details involved in a project is overwhelming to such persons. Quotations to this effect have been included as part of Appendix E. In some cases, this situation might

be rectified by the provision of training materials and or sessions to assist such persons. A more drastic action might be to remove such personnel from the position with the attendant morale after effects. It is important, therefore, that superintendents be aware of the desirable and necessary competencies and skills in a project director so that qualified personnel may be appointed or selected for the position.

Based upon the analysis carried out and described in preceding sections of this report, implications for top level management of the introduction of the project management concept into the LEA appear to focus upon four major problem areas or needs:

- 1) An introduction to the general nature of the project and project management concepts is needed.
- 2) An understanding of the changes brought about by the introduction of the project management concept in the LEA and particularly with regard to the authority and responsibility patterns in existing organizational structures is needed in order to make appropriate adjustments.
- 3) An understanding of the operations of project management must be gained in order that appropriate administrative and technical support can be provided.
- 4) An understanding of the professional and personal skills and competencies needed by project directors in order that personnel selection can be more efficiently carried out.

IV. IMPLICATIONS OF THE ANALYSIS PHASE FOR THE CONCEPTUAL PHASE

The basic output of the analysis phase is a summarization of what might best be called the "state-of-the-art" with regard to the utilization of project management as a vehicle for bringing about change or innovation in the local school district. An overall picture of the operation of this concept has been pulled together from a series of pieces.

The conceptual phase requires that this general picture be translated into a statement of instructional objectives which will guide the direction of the materials developed. A statement of instructional objectives at this point does not however, predetermine the instructional strategy to be employed. In addition to instructional objectives, the statement will be utilized to develop a characterization of the parameters existing in the local situation having a bearing upon the training materials that can be employed. The latter statement will have to deal with the question what is practical to accomplish within a local educational agency with regard to project management training. The answer to this practical dimension in turn will have an effect upon the actual instructional objectives which can be implemented.

It is important to stress two major points in attempting to provide the linkage between the analysis and conceptual phases. First, the validity of the activities of the conceptual phase depends upon the validity of the description provided in the analysis phase of the role of project management in the LEA and the duties and responsibilities of project directors and superintendents as to the implementation and operation of the concept. Second, it may be necessary to review the results of the analysis phase

in order to clarify misunderstandings or ambiguities regarding project management in the LEA. Freedom to modify is necessary in the conceptual phase.

Properly viewed in terms of the overall project, the action required in moving from the analysis phase is to develop a statement of the desirable behaviors required by actual and potential project directors in the LEA along with those behaviors that are desirable for a superintendent to possess. The conceptual stage is therefore best seen as a synthesis step following the analysis phase.

APPENDIX A

BACKGROUND AND INNOVATIONS IN EDUCATION LEADING TO THE NEED FOR
MANAGEMENT IMPROVEMENTA. BACKGROUND AND INNOVATIONS IN EDUCATION

At this point it seems appropriate to trace the development of the increased educational effort which now involves the Federal government to a rather large degree.

Recent presidential commissions on National goals have usually included a list of goals in education. For example in the report of President Eisenhower's Commission on National Goals presented in 1960 the education goals were rigorously defined in such a way that the federal government was to be a partner in the public education effort. To meet this requirement, Federal legislation has been drafted by the executive branch and subsequently adopted by Congress to become the Federal Education Acts mentioned in Section I of this report.

Concurrent with the federal activity in public education there were groups of educators who were aware of difficulties within their area of speciality and created programs to improve public education. An example is the School Mathematics Study Group (CSMP), a project funded by the National Science Foundation, which worked on the improvement of the whole mathematics curriculum for the purpose of improving the mathematics knowledge for the widest possible group of students.

Many other groups of professionals in education were aware of the wide gap between what was and what could be achieved in education in our public schools. These groups have continued to express their collective concern on a larger audience. They have recognized the following:

There are stated goals for public education

There is a rather good possibility for goal achievement

There exists a difference between the actual and the possible in education

There are limited resources available for a local school agency to materially reduce the difference (to develop alternate solutions to their present program)

There exists the possibility of applying a well developed solution for one local school agency to similar difficulties in other school agencies

The stated concerns of these groups of educators found their way to foundations and to concerned public officials in the state and federal government. As a result, project proposals, experimentation, and curriculum revision groups were founded. The event of the launching of the Russian Sputnik and the criticisms of influential persons, Admiral Rickover for one, added a sense of urgency to the effort.

Goal setting at the federal level and the work done by education groups at lower levels resulted in federal legislation which provided the funds to work toward the solution of the recognized educational problems.

B. NEED FOR IMPROVED MANAGEMENT

Because public funds are involved and accountability is necessary in dealing with public funds then the additional problem of designing, administering and evaluating a funded project becomes a concern both at the federal and local educational level. In this regard the role of educational project manager needs to be defined and a group of people need to become experienced in this role. Because of the increasing number of projects in education, the expanding nature of projects now in existence, and rising

cost of the total effort competent educational project managers need to be recruited and trained in the role.

The educational project managers in the local schools have tremendously responsible jobs. Let us look at a couple of examples.

A \$500,000 three year remedial reading project in the inner-city schools of a midwestern city has a first year manager with very little administrative experience. Her expertise is reading education. She readily admits to serious difficulties in dealing with the principals and their established procedures and schedule. She wants to know how to better accomplish the goals of her project.

Another example deals with a mathematics program utilizing computers.

The project manager expresses a need for knowledge of budgetary controls and expenditure constraints. He also needs procedures for evaluating the progress of the project. He is evaluating individual student progress instead of overall project progress.

There is also a need for elements of management discipline in the local schools even when federal funds are not involved. For example, an interview concerning two in-service training programs revealed that no specific goals were established other than the implementation of an in-service program. There was no criteria for evaluation. The project direction should have recognized as a major objective the evaluation of the in-service programs for the possibility of adopting them as a permanent part of the total program. Thus, a way of evaluating the adopted in-service program should have been established to determine its effectiveness in this particular school district's environment.

The need for a more comprehensive approach to planning and controlling projects in the educational environment is established by the observation that this type of activity in education is (a) becoming both more complex

and larger; (b) calling for greater allocations of money and (c) continuing for longer periods of time.

The concept of project management as a discipline is just making its debut in the educational environment. This discipline has grown out of military and industrial needs and is barely fifteen years old.

APPENDIX B

A BRIEF HISTORY AND DEVELOPMENT OF PROGRAM MANAGEMENT

A. CHARACTERISTICS OF PROJECTS AND PROGRAMS

A project is characterized as a unique effort, a one time operation that crosses functional and organizational lines. It is established to achieve an identifiable goal within the performance specifications, time frame, and available resources. Several objectives may be involved in achieving this project goal. However, the objectives to be focused upon are in support of the accomplishment of the project goal.

An additional characteristic which helps to define a project and provides an assessment of dimension is its complexity. Complexity leads one to assume quantity of tasks to be accomplished. However the tasks must be related clearly to the project. Each project is identified by a unique set of tasks which separates it from any other project. To recap, a project is defined:

- 1) as a unique one time effort with a clearly defined start and end date.
- 2) to achieve a single specific objective, producing a terminal product.
- 3) subject to time and funding limitations (project is ended with the completion of its objective)
- 4) generally complex with many series and parallel tasks related exclusively to accomplishing the project goal.

Some examples of projects in the local agency are as follows:

- the development and conduct of in-service training programs
- installation of data processing systems for not only business accounting purposes but for the purpose of accounting for student achievement

- processing tests and printing grade cards
- the design and construction of schools
- facility modernization and expansion and major plant maintenance programs.
- budget development
- implementation of innovative instructional programs
- action research as related to specific teaching techniques
- systems and procedures installation
- design and construction of model cities educational planning
- bi-lingual educational programs
- minority representation in curriculum development

Project management can be applied in every operational and functional area of the LEA as long as it meets the above criteria for a project.

The term "program" is and has been used interchangeably with the term "project" in many instances. Depending upon the authority, a program can be defined in many different ways. For the purpose of this subject effort however, a program is defined as a related series of projects which continue over a period of time and are designed to accomplish an even broader educational objective. A "program" therefore is an undertaking by an educational agency which integrates one project with other related projects into a larger system to achieve the agency's goals.

B. NATURE OF PROJECT MANAGEMENT

Project management is the ability to gather the skills (people) and resources (money, facilities and tools) required to weld these elements into an efficient means of achieving the project objective. The consumation

of the project objective is the direct responsibility of one man - the project manager or project director (project manager and project director in this report is being used interchangeably). A proper understanding of the nature of project management and the function and duties of the project manager require a knowledge of where the projects are placed in the organizational structure of the school district. It is assumed that most projects will be housed or placed within the existing educational agency's functional structure as opposed to being a separate functional entity. The most typical situation is to have the project placed within an existing organization. Five general types of project placement are presented below and the relative advantages and limitations of each presented:

1) Separate organizational approach. One approach is to place the project within the organizational structure but completely independent of any existing functional units or departments. In this case the project is self-sufficient with regard to the project requirements. All personnel fall under the project manager's authority. Staffing is provided either by transferring personnel from other departments or by hiring from outside sources. Such a unit is normally dissolved upon the completion of the project, with staff members reverting back to their original departments and/or leaving the organization.

This approach has advantages in that the project manager has direct control over all the dimensions of the project. The main line of authority is principally to the chief executive of the organization. One of the major limitations in this approach is that the project staff assembled for conducting the project will be lost upon completion of the project. In such

instances the organization, if not able to place persons in other areas, can lose the services of some very valuably trained specialists.

2) Vertical or centralized approach. A second general approach to project placement in the organization is to locate it in a vertical line unit or department. All the necessary project staff are drawn from that department and placed under its administrative head. In this kind of approach, lines of authority and responsibility are known to all persons working on the project. The personnel department may or may not have the staff to work on the project in which case individuals may be drawn from other functional units and placed in the department for the duration of the project. Persons may be employed from the outside to work on the project. This approach has the advantage of well-known lines of authority and responsibility. It has a limitation that such arrangements can lead to new and powerful units as individual projects increase in size and number. This approach often results in empire building. If the empire becomes big enough, the organization may find itself moving a sub-unit from one department to a level of a major department. This approach appears not to be a common one employed in many agencies because of the problems of securing competent staff from within the department as well as the problem of empire building.

3) Horizontal or decentralized approach. The most typical approach with regard to project placement is to superimpose it upon an existing vertical and horizontal structure with no lines of responsibility and authority. In a sense, the project becomes a horizontal unit working across the vertical organizational structure. Personnel needed to work on the

project remain in their department or functional units. Project tasks are assigned to functional departments as required. Project manager is responsible for the completion of the work and generally has authority over the what and why of the project while the functional department manager usually retains authority over the how.

Limitation to this approach is that the project manager often lacks authority over the vertical functional areas in which the project tasks are accomplished. Because of this situation the larger single purpose project which cuts across functional organizational lines of authority causes unique management relationships and requires a new and different management philosophy than has existed in the past. Traditional functions of superior-subordinate lines of authority are difficult to apply in this approach when the subject involves a coordination of a large number of persons working under departmental heads, whose authority and responsibility lines are vertical in nature.

4) The executive staff approach. In some cases one or more projects may exist in an organization perhaps in functional units and one person is designated to serve as a staff assistant to the chief executive. This person's responsibilities are hard to coordinate, analyze and make recommendations regarding project situations. The final decisions are made by the chief executive. Under this arrangement the person placed in direct charge of the project cannot function effectively as an integrator and decision-maker since these have been taken out of his hands. This type of approach is similar to that of the role of the expeditor in many organizational units.

5) Project staff approach. This arrangement usually consists of a project manager being appointed with a staff available to carry out such processes as scheduling, task and cost control, and other special functions unique to the project. The functional departments still perform the majority of the work associated with the actual completion of the project. Such an approach requires considerable coordination between staff and functional department. This approach is very closely allied to the decentralized approach. As was noted, a most typical approach is to place the project within an existing organization with the assignment of a person or staff to be in charge of the project. In such situations certain general problems present themselves which make the job of project management quite difficult. It often happens that functional departments are more interested in their own specialities than in contributing to a unified project effort. Often times the total perspective of the project is lost. Actions are taken without regard to their effect on total project activity. Decisions pertaining to the project are slow and difficult to make and the required information relative to problems must be obtained through several channels from the various functional departments. The very nature of projects requires rapid adjustment to new situations. In many cases, functional departments are not able to be sufficiently flexible to deal with such adjustment. It is this kind of situations and problems which have created an interest in the topic of project management in order to develop solutions to them.

The functions of management within the framework of the definition of the project/program and organizational structure have been defined in

many different ways. For our purposes, the basic functions of project management are two: 1) planning; and 2) controlling. In order to accomplish these functions many other sub-set functions are utilized such as coordinating, organizing, staffing, motivating, communicating and directing. These functions are secondary to planning and controlling due to the amount of time typical project managers spend on these functions and the importance they place on them in accomplishing the objectives of project management.

APPENDIX C

LIST OF DUTIES AND RESPONSIBILITIES FOR PROJECT MANAGERS

The literature review can be summarized as:

- 1) Duties or responsibilities or functions
- 2) Useful techniques or skills
- 3) Attributes or criteria

A. The duties identified are:

decision-making
making objective statements
making policy and plan statements
organizing
controlling (time, cost, and performance)
problem solving
budgeting and scheduling
reporting
communicating
motivating
staffing
executing
planning
delineating lines of responsibility

B. Useful techniques are:

time scheduling
funds allocating
problem prevention
orderly reviewing
use of progress reports (late reports are
clues of problems)

- plan and action definition
- drawing lines of responsibility
- co-ordination of plan and control
- understanding interrelationships

C. Attributes are:

- adaptability
- ability to balance factors
- ability to integrate and generalize
- ability to selectively and periodically specialize
- readiness to devote major attention to planning and controlling
- effective leadership skill
- effective communication skills (written and spoken ability to clear one's thoughts)
- ability to recognize potential problems
- ability to attain intellectual sophistication (periodically)

APPENDIX D

LIST OF DUTIES AND RESPONSIBILITIES OF EDUCATIONAL PROJECT MANAGERS

(Cook, Kerns, Damico Report^{**})

1. Prepare the initial proposal
2. Participate in contract negotiations
3. Have sole responsibility for project design
4. Delegate responsibility for project design
5. Work on one project at a time
6. Work on several projects at one time
7. Submit unsolicited proposals
8. Respond to solicited requests for a proposal
9. Have professional competence in specific area under investigation
10. Possess a solid background in educational research methodology
11. Possess a significant degree of technical competence in the critical areas of the project
12. Be a generalist rather than a specialist
13. Identify scheduling constraints
14. Estimate manpower requirements
15. Have flexibility in designing project within predetermined specifications
16. Identify physical facilities necessary for staff and project operation
17. Secure physical facilities
18. Select project personnel
19. Train and develop personnel in order to carry out the activities called for in the project
20. Assign personnel to specific project tasks
21. Supervise, coordinate and control the activities of project personnel
22. Define authority lines
23. Define responsibilities of subordinates
24. Expect subordinates to give advice freely
25. Determine financial needs of project
26. Develop the formal budget
27. Have authority to make all decisions relating to project (vertical line)
28. Have authority to direct the work on the project, regardless of the organizational level of the responsible person assigned to a task (horizontal movement across vertical lines)
29. Report regularly to a higher level on progress of project
30. Prepare written technical progress reports
31. Use a management control technique for planning and scheduling (PERT, bar chart, milestone charts, etc.)
32. Have authority to assign priority levels
33. Allocate various time periods for completion of different phases of the project based upon talents of project staff

34. Designate funds to various phases of work within the project
35. Have authority to make decisions on trade-offs between schedules, budgets, and performance of project personnel
36. Evaluate the performance of project personnel
37. Have authority to dismiss personnel who are not performing
38. Give credit when due to individual staff members
39. Hold regularly scheduled staff meetings
40. Use face-to-face communications as the best method to accomplish the management job
41. Devote most of management time to the functions of organizing and directing
42. Devote most of management time to the functions of controlling and organizing
43. Devote most of management time to the functions of planning and organizing
44. Devote most of management time to the functions of planning and controlling
45. Devote most of management time to the functions of controlling and directing
46. Devote most of management time to the functions of planning and directing
47. Outline steps needed to be taken to reach objectives
48. Establish important milestones for the project
49. Establish dates at which milestones should be accomplished
50. Never allow slippages or overruns to occur
51. Require all incoming external information to flow through the project director
52. Reply to all correspondence related to project
53. Participate as an active team member
54. Record all important work thoroughly
55. Prepare evaluative report at completion of project
56. Should have a degree in Educational Administration
57. Possess experience in a sector of the economy other than in the field of education

*"An Investigation of the Responsibilities and Duties of Educational Project Managers," Desmond L. Cook, Wilmer Kerns, and Sandra Damico, September 1970.

APPENDIX E

PERSONAL INTERVIEW COMMENTS

Mrs. Chubb:

"I can speak for the advantage of having past experiences in federal projects, even so I'm overwhelmed by budgets and the business end of it. But the advantages of having come through four different job experiences before this, as a project director, was of inestimable value. If every program manager could have had the chance to work in federal projects through a number of programs, say if they were to have menial tasks and work up in order that they have the whole picture. Granted that I'm far from being as knowledgeable as I should be, but I still appreciate the business training that I have had. I still think that a background of experience would be invaluable for these people (Program managers). To have the opportunity to not jump in at the manager's spot, but to work up."

Mrs. Johnson:

"Somehow, someway, help is needed so that educators can interact with supervisors and other administrators to somehow help them see what the job (project management) entails. You know, not only does it entail management but it entails supervision. Now if you are going to be knowledgeable enough to be a good manager, you need help. I mean, how do you become a good manager without neglecting the supervision aspect. In other words, the task is a far greater one than you realize until you get into it."

Mr. Abramovitz:

"Alright, let's talk about this element of supervision and overall management. Your problems are certainly different than that of a typical administrator

of a school. Now, we all say right, but I think what we ought to convey is, as you see them, how are their problems different. Because you see, the people who hire you don't have your background. They don't know what you're getting in to. They want a program and if they spent fifteen minutes on it-- that's good and I spent a half hour with them attempting to explain it.

And then they say, "I think it's good, go ahead"; but at that point then, they completely drop out of the picture. Now you walk in and you're confronted immediately with many managerial problems of a budget nature, management, etc.; typical type of mechanical things that you may or may not have a background in. But there is a much greater problem here facing you immediately and that is supervision from a different aspect than what the traditional principal or almost any administrator at the central board has to face."

Mrs. McSwain:

"This supervision involves the principals and teachers. Project managers need to let others know what the project is all about and its worth for the children. That is, the people with whom the project director is going to have to work. These people are going to have to (learn to) accept the program and the project director."

APPENDIX F

Date _____

EPM INTERVIEW QUESTIONS

Interviewed: Name _____ Title _____
Address _____

- * 1. Project title/identification _____
 - * a. Subject area _____
 - b. Where in school organization is this Project placed (Line diagram on back)
 - c. Who initiated this Project? _____
 - d. Were you (the PM) involved in the proposal development? If so, to what extent? _____
- * 2. Project Definition
 - * a. Is there a service or product to be ready at a specific date? _____
 - * b. State Same _____
 - * c. Will there be an assessment of objective accomplishment? _____
 - * d. Budget? Performance? _____
 - * e. By whom? _____
- * 3. Scope of Project
 - * a. Amount of funds to be managed? _____
 - * b. What other resources are available? _____

 - * c. Length of time the project operates? _____
 - * d. What phase is this Project in total Program effort? _____

* e. How many persons and at what level will be affected by the Project? _____

* f. Does the project include provisions for publicity? Why and in what way?

4. Qualifications of personnel administering the project?

a. How was the Project Director selected? _____

* b. Project Director - past title _____
 salary and present title _____

c. List Project Directors past positions _____

* d. List Director's education and training background _____

* e. What percent of time is expended by the Project Director on the Project? _____

* f. List the duties and responsibilities of the Project Director _____

* g. What type and how much support is available to the Project Director? _____

Consultants _____ Advisory Committee _____ Students _____

Teachers as staff: Full time _____ 1/2 time or more _____ Less than 1/2 time _____

Other staff: Full time _____ 1/2 time or more _____ Less than 1/2 time _____

Positions _____

h. What are your working relationships with the superintendent? Business office?

5. Dimensions of Project Management

a. What are the tasks of project management? _____

b. What decision making authority does the Project Director have? _____

c. What specific techniques of management have been useful? _____

d. What specific problems have developed and/or can be expected? _____

e. Have you sought help in managing your projects? _____ If so, where? _____

6. Do you feel you could use some additional training? _____

a. If so, what areas of training do you feel would be helpful? _____

7. What type of training would you prefer? _____

a. Self-Instructional package?

b. Lecture?

c. On the job?

d. Seminars?

e. Workshop?

f. Other? _____

* 8. Check to see if copies of proposals, reports, forms, flow charts, etc. are available and could be put in our files.

* Questions primarily related to Proposal Review.